

**TECHNIQUE FOR INDEPENDENT GROUND FAULT DETECTION
OF MULTIPLE TWISTED PAIR TELEPHONE LINES
CONNECTED TO A COMMON ELECTRICAL POWER SOURCE**

ABSTRACT

A method and apparatus detects a ground fault on a span-powered telecommunication wireline within a plurality of span-powered wireline segments, to respective ones of which DSL-Cs are coupled, so that a ground fault may be detected when power is delivered by the DSL-C over a respective wireline segment to a respective downstream functional RT. A respective DSL-C measures a first voltage across a first sense resistor representative of current flowing in a first portion of its wireline segment to the RT, and also measures a second voltage across a second sense resistor representative of current flowing in a second portion of the wireline segment from the RT. In response to a difference in the first and second voltages an output representative of a ground fault in that wireline segment is generated.